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DEPARTMENT OF COMMERCE AND LABOR
BUREAU OF FOREIGN AND DOMESTIC COMMERCE

A. H. BALDWIN, Chief

SPECIAL CONSULAR REPORTS—No. 58

MACHINE TOOLS IN LATIN AMERICA



WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

DEPARTMENT OF COMMERCE AND LABOR

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LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

Washington, January 1, 1913.

SIR: I have the honor to submit herewith a series of consular reports on the markets for machine tools in Latin America. The countries included are for the most part agricultural, and the demand for machine tools has been small, but there seem to be some markets that are expanding steadily. The reports contain lists of the importers and users of machine tools, descriptions of the sales methods employed, opinions on the possibilities of the markets, etc. It has, however, been impossible to ascertain prices.

Respectfully,

A. H. BALDWIN,
Chief of Bureau.

To Hon. CHARLES NAGEL,
Secretary of Commerce and Labor.

MACHINE TOOLS IN LATIN AMERICA.

MEXICO.

AGUASCALIENTES.

[By Consul Gaston Schmutz, Aguascalientes.]

Machine tools are used to a limited extent in the railroad construction shops, the smelting plant, and the mining plants of the Aguascalientes consular district. In the city and State of Aguascalientes nearly all such tools are of American make. In Zacatecas it is estimated that three-quarters of the machine tools are of American make and the other quarter of German and English manufacture.

American-made machine tools are generally preferred to those manufactured elsewhere, and even the foreign firms that handle both American and foreign tools admit the superiority of the American tools, although for other reasons they continue to sell the German and English products.

Sales are made through New York purchasing agents or representatives of the larger industrial concerns, or by direct agencies of the tool manufacturers and jobbers of the United States. Following is a list of firms in the district that handle or might be induced to handle machine tools: In Aguascalientes—Gualterio Eikel, S. en C.; Aguascalientes Lumber & Mercantile Co.; Ismael Romo; Sagredo Hermanos; in Zacatecas—Reimers Hermanos; S. & M. Ibarguengoytia S. en C.

The following individuals or firms use machine tools in Aguascalientes: National Railways of Mexico, construction and repair shops; American Smelting & Refining Co.; Lawrence Bros., foundry; Antonio Arias; Compañía de Electricidad y Tranvías de Aguascalientes. In Zacatecas the following concerns use such tools: "El Bote" Mining Co., J. S. Pattenson, manager; Cinco Estrellas Mining Co., Pinos, Zacatecas; Dulces Nombres Mining Co., Chalchihuites, Zacatecas; Fresnillo Co., Fresnillo, Zacatecas; Compañía Metalúrgica y Beneficiadora de Zacatecas, Fernando J. Lejeune; Negociación Minera "El Magistral," C. A. Gilbert, president; Milagros Mining Co., Ojocaliente, Zacatecas; Negociación Ma de Magdalena; Negociación Minera "La F6" y Anexas, Guadalupe de Zacatecas; Negociación Minera "San Roberto," C. A. Bently, manager; Negociación Minera San Antonio del Conjino y Anexas, F. Amizaga Palacio, Chalchihuites, Zacatecas; La Noria Development Co., G. C. Palmer, Zacatecas; Compañía Restauradora del Mineral de Veta Grande, S. A.; Veta Grande, S. A., Lic. Luis Escobedo; Santa Maria (Mexico) Mines (Ltd.), Minillas, Zacatecas; Sombrerete Mining Co., Sombrerete, Zacatecas; Zacatecas Mining & Metallurgical Co., M. D. McDonald, president.

Prompt delivery, strong crating and packing, and clear and legible markings in the language of the country to which export is made is essential. In spite of the reiterated declarations of American

exporters, Mexican importers still complain that the greatest disadvantages in buying from the United States are the slow deliveries and defective packing. Original bills of lading showing through freight rates to destination and copy of invoice to customs agents should be sent to consignee and transportation companies should be requested to expedite shipment.

DURANGO.

[By Consul T. C. Hamm.]

As the Durango consular district is primarily an agricultural and mining one, machine tools are not now used to any large extent, although the rapid progress along industrial lines in the last few years indicates that the market for machine tools will be a constantly expanding one. At present machine tools are employed chiefly in the machine shops and foundries of the district, although the large smelters, mining companies, saw mills, soap factories, rubber factories, cotton and woolen mills, etc., maintain repair departments in which some machine tools are used.

A careful inquiry among dealers and buyers indicates that American manufacturers enjoy an absolute monopoly in the district for this line of goods. There is no prejudice against American-made machine tools; on the contrary, they are considered the best and are always preferred.

Many of the users of machine tools place their orders directly with the manufacturers or exporters in the United States; others obtain them through a large machinery house in Torreon, which holds the local agency for several American machine-tool houses and keeps several men constantly on the road throughout the northern part of the Republic. The manager of this Torreon firm states that the commission charged, the terms offered, and the discounts allowed were dependent upon the individual customer, existing conditions, etc., and that under present circumstances no uniform procedure obtained or could obtain. Advertising as a means of exploiting sales is not resorted to in this district.

The following firms are now selling machine tools in this district: Dodson Manufacturing Co., Torreon, Coahuila; Durango Foundry & Machine Co., Durango, Durango. The firms who might be induced to undertake their sale are Emilio P. Stein, Gomez Palacio, Durango, and Peters y Cia. Sucs., Durango, Durango.

The firms listed below are users of machine tools to some extent at least:

Carriage manufacturing:

Talleres San Luis, Manuel Urquidi, Durango, Durango.

Cotton mills:

La Fe, S. A., Torreon, Coahuila.

La Amistad, S. A., Gomez Palacio, Durango.

Fabrica de Tunal, Gurza Hnos., Durango, Durango.

Fabrica de Concha, Penon Blanco, Durango.

Foundries and machine shops:

Fundicion de Fierro de Torreon, S. A., Torreon, Coahuila.

Dodson Manufacturing Co., S. en C., Torreon, Coahuila.

Torreon Iron Works, Torreon, Coahuila.

Torreon Boiler Works, Torreon, Coahuila.

Torreon Brass Foundry, Torreon, Coahuila.

Durango Foundry & Machine Co., Durango, Durango.

Talleres Mecanicos, Rowland Ball, Durango, Durango.

Lumber mill, box factory, etc.:

Cia. Madera de la Sierra de Durango, Durango, Durango.

Rubber (guayule) factories:

Continental Mexican Rubber Co., Torreon, Coahuila.
 La International, Torreon, Coahuila.
 Mexican Crude Rubber Co., Viesca, Coahuila.
 Fabrica de Hule, Oton Katterfeldt, Gomez Palacio, Durango.
 Cía. Mexicana Explotadora de Hule, Gomez Palacio, Durango.
 Cía. Hulera Nacional, Wm. Magenau, Gomez Palacio, Durango.

Soap factories:

Cía. Industrial Jabonera de la Laguna, Gomez Palacio, Durango.
 La Union, O. G. Neumann, Torreon, Coahuila.

Woolen mills:

La Constancia, Durango, Durango.

Smelters:

American Smelters Securities Co., Asarco, Durango.
 Cía. Metalurgica de Torreon, Torreon, Coahuila.
 Penoles Mining Co., Mapimi, Durango.

GUADALAJARA.

[By Consul Samuel E. Magill.]

Machine tools in the Guadalajara consular district are limited to the few lathes and thread machines, anvils, hammers, and borers needed in repair shops. There are 3 general repair shops, 2 valve factories, 1 railroad repair shop, and 1 foundry using some machine tools, all of which are of American manufacture, even in the case of the foundry, which is owned and conducted by Germans.

With the exception of the railroad repair shop, the supplies for which are purchased through the headquarters in Mexico City, all the machine tools marketed here are sold through the following machinery houses in this city: Juan H. Kipp, Carlos Hering, E. Paulsen & Co., and Abraham Gallardo. Sales by these houses are made without special advertising and are limited to a very few of the commonest tools. Concerns at present using machine tools are as follows: National Railways of Mexico, repair shops; Bolamar y Tatay, general repairs; E. Gibau, general repairs; Gallo Hermanos, general repairs; Carlos Hering, foundry; Julio Collignon, valves and faucets; W. B. Carroll, valves and faucets.

HERMOSILLO.

[By Consul Louis Hostetter.]

At present machine tools are not used to a very great extent in the Hermosillo consular district, owing to the disturbed state of the Republic. They are used by foundries, furniture manufacturers, a few of the mining companies, a cotton mill, carriage factories, and blacksmiths. Practically all are of American make. With the resumption of normal business conditions there will be a good demand for all kinds of tools. At present all shops, mines, etc., are doing a limited business. There is no prejudice against American-made tools.

Sales are made through agencies and direct. Agencies generally cover the entire west coast. One agent states that the general commission is 10 per cent and discounts 10 to 25 per cent. The most effective advertising is said to be in magazines published in the United States; no good journals for the purpose are published in the district.

Firms and individuals who are now selling or who would be willing to undertake the sale of American machine tools are as follows: In Hermosillo—Fundicion de Sonora, Bley Hermanos, Cía. Ferretera; in Guaymas—Cía. Industrial y Explotadora de Maderas, Arturo

Morales, Luis A. Martinez; in Alamos—T. R. Bours y Hermanos, German Bley. These are the largest dealers in the district.

The following firms are at present using machine tools: Fundicion de Sonora, of Hermosillo, and Cia. Industrial y Explotadora de Maderas, of Guaymas. The other firms mentioned as dealers are also users to a more limited extent than these two.

MEXICO CITY.

[From Vice Consul General H. M. Walcott.]

The greatest demand for machine tools in Mexico is for the class of tools used in railroad repair shops and in connection with the mining industry. As there is very little manufacturing in Mexico, there is not much demand for other classes of machine tools. The United States has practically all the trade in this line, for American manufacturers are now ready to meet those of Europe in the matter of credit terms, commissions, packing, etc., and they have a decided advantage in being close to the market.

Sales are made almost exclusively through general agencies, and no machines are carried in stock. The best advertising mediums in the City of Mexico are the following daily newspapers and monthly magazine: The Mexican Herald, El Imparcial, El Diario, the Mexican Mining Journal.

The following are the principal agencies handling machine tools: British-American Agencies, Calle Nuevo Mexico y San Juan Letran; General Supply Co., Isabela la Catolica, No. 51; Sommer, Hermann & Co., Calle Palma; P. J. Brown & Co., 3a Nuevo Mexico, 62; Phillipi Roder, Calle Nuevo Mexico.

The largest users of machine tools in the district are the National Railways of Mexico (E. L. Bashford, purchasing agent, Mexico City) and the Mexican Railway Co. (Ltd.) (Agustin Herrera, purchasing agent, Mexico City).

MONTEREY.

[By Consul General Phillip C. Hanna.]

Nearly all machine tools used in the Monterey consular district are of American make. They are used in the foundries and machine shops of the different industries. There is no prejudice against American tools; in fact they are considered to be better made and easier to manage than like machinery from other countries, and the fact that repair parts can be secured much quicker from the United States is a great advantage.

A large proportion of the purchases are made direct, although some are made through local dealers. Conditions of sale, commissions, discounts, etc., are not known. There are no advertising mediums that would be of real value for this class of goods. Direct and frequent correspondence by the seller with the present users of such machinery and with prospective users is the only sure way for the manufacturer to keep his product fresh in the memory of those who may be in need.

Dealers of this city who might be interested in propositions from American manufacturers for the handling of machine tools are as follows:

J. Cram y Cia.
Ferreteros el Barco.
J. Sanford y Cia.
Carlos C. Guerra y Cia.
Hay & Roberston.

Monterey Supply Co.
G. D. Fitzsimmons.
Langstroths Sucs.
José F. Farias.
José A. Trecino.

The following are the industrial establishments of this city using machine tools:

Cerveceria Cuauhtemoc.
Fundicion No. 3.
Monterey Steel Plant.
Fundicion Central.
Talleros del Ferrocarril.
Antonio Elosua.
C. Holck y Cia.
Felix Mora.

Fundicion Hidalgo.
Fundicion No. 2.
Fundicion Monterey.
Siller Hermanos.
Cia. Tranvias y Luz Electrica.
Carlos C. Guerra y Cia.
Jorge Warden.
Prudencio Trujillo Suc.

SALTILLO.

[By Consul Philip E. Holland.]

While there is only one extensive and up-to-date machinery plant in the Saltillo district there is considerable use of machine tools. They are used by mines, smelters, rubber factories, flour mills, cloth factories, the electric-light plant, and railroad machine and repair shops.

American-made machine tools are used almost exclusively in this district, principally because of the facility for correspondence and transportation. It is also claimed by those employing machine tools that specifications are more easily met in the United States, and that machine tools made in the United States are lighter in weight than those made in Europe, and equally strong.

ADVERTISING.

Sales are usually made through direct correspondence with the manufacturer. The principal plants are as well supplied with catalogues and all kinds of technical literature as similar establishments in the United States. Their credits are well established and they know when to buy. They simply submit their needs to the manufacturer. The transactions are usually cash with 2 per cent discount; otherwise the conditions are one-half cash with order and one-half against shipping documents. When purchases are made through commission merchants the charge is from 2 to 5 per cent.

In addition to the catalogues and descriptive and sales literature the various plants subscribe to the technical journals and scientific magazines of the United States. The Mexican Mining Journal, published monthly in English and Spanish by the Mexican Publishing Co., S. A., Apartado No. 105 Bis., Mexico City, has an extensive circulation. It is the only periodical of its class in this country. The Mexican Herald, Mexico City, is a newspaper in English with a general circulation throughout Mexico, and it is a good medium for the American advertiser.

USERS OF MACHINE TOOLS.

There are no individuals or firms in this district who are prepared to undertake the sale of machine tools except as local agents. It would be impracticable for them to keep such stock on hand for their own account.

The following is a list of the users of machine tools in this district:

Mazapil Copper Co. (Ltd.), P. O. Carr, general manager, Apartado 64, Saltillo; George H. Klaptham, superintendent of machinery, Concepcion del Oro, Zacatecas. This is the largest concern in the district and operates the copper smelter at Concepcion del Oro, various mines in the vicinity of Concepcion del Oro, and the lead-silver smelter, Saltillo.

Santa Rosa Mining Co. (Ltd.), Apartado No. 12, Concepcion del Oro, Zacatecas.

Cía. Minera Santa Maria de la Paz, Matehuala, San Luis Potosi.

Cía. Metalurgica Nacional, Matehuala, San Luis Potosi.

Salvador Madero y Cía., Vanegas, San Luis Potosi.

Mexican Crude Rubber Co., Viesca, Coahuila.

Mexican Crude Rubber Co., Cedral, San Luis Potosi.

Cía. Explotadora de Caucho Mexicano, S. A., Apartado No. 62, Saltillo, Coahuila (rubber).

Cía. Explotadora Coahuilense, S. A., Parras, Coahuila (rubber).

Norman F. Rutherford, Apartado No. 168, Saltillo (private machine shop).

Coahuila & Zacatecas Railway Co., Saltillo.

National Lines of Mexico, Saltillo (division repair shops).

H. Boardman y Cía., Ramos Tizpe, Coahuila (cotton factory).

Cía. Industrial Saltillera, Saltillo (cotton factory).

Cía. Industrial de Parras, Parras, Coahuila (cotton factory).

There is no complaint from the importers as to the American methods of packing machine tools.

CUSTOMHOUSE REQUIREMENTS.

Upon the arrival of the goods at the border it is necessary that they be declared for import. Unless some arrangement is made for their entry, delay is quite probable. The formality of entering the goods is attended to by a person known as a customs broker or agent. He is obliged to declare the nature, quantity, and weight of the goods and to forward them to their destination after having paid the required customs charges. There are private brokers at the ports of entry who attend to the dispatch of goods consigned to their clients in Mexico.

The National Railways of Mexico have a customs agent at each port. Goods are often consigned to his care, being marked "Care of customs agent of the National Railway Lines of Mexico." He declares, enters, and dispatches the goods to the consignees. The customs duties are also paid by him and forwarded for collection to the railroad agent at the destination along with the freight charges, if any. The railway customs agent may also dispatch goods that arrive without having been consigned to the care of anyone if the consignee be known to him and the value of the goods warrants his paying the charges. Small shipments, consigned to unknown parties, that arrive without instructions as to entry are subjected to delay, unnecessary expense, and possible loss.

The customs agent's bill, whether private or the railway agent, consists of the following items: Inspection on the American side of the border; Mexican consular invoice; customs charges as per Mexican customs tariff; Mexican Government revenue stamps; inspection and dispatch on the Mexican side of the border; and the agent's commission of about 1 per cent.

Export houses in the United States that have an established business with Mexico are thoroughly posted as to the requirements for the prompt dispatch of their goods at the border. Many of them have their own bills of lading and packing lists, giving all information required by the Mexican customs authorities.

The Treasury Department of Mexico requires that a copy of bills of lading, covering goods imported into Mexico, be presented at the customhouse at port of entry with other customhouse papers. Unless instructions, copies of bills of lading, and packing lists or invoices are supplied the customs agent, freight will be held until such documents are received.

Bills of lading to points in Mexico should always be issued at least in duplicate. The original should be sent to the consignee and the duplicate to the customs broker in whose care the shipment is consigned for dispatch. Bills of lading should show the through rate to destination. They should also have a clause to the effect that the through rates named therein do not include the expense of the customhouse entry and dispatch at the Mexican border. It is said that the European shipments are more in conformity with the Mexican freight classifications approved by the Department of Communications and Public Works. The present classification has been effective since July 1, 1903, and can be obtained upon application to the Department of Communication and Public Works. It is printed in English and in Spanish.

European shipments are always made in accordance with the metric system and the freight quotations are in Mexican money. These are very convenient for the buyer and the Mexican customs authorities. It would be to the decided interest of American exporters to adopt this practice. The South Western Lines tariff gives the most complete and detailed information for shipments intended for Mexico.

SAN LUIS POTOSI.

[By Consul Wilbert L. Bonney.]

The market for machine tools in San Luis Potosi is limited to three foundries, three woodworking shops, one industrial school, and railway repair shops. Nearly all the machine tools are of American manufacture. One woodworking establishment uses German tools, as the proprietor is German, and occasionally an English lathe is found, but American tools are the rule.

The possible market for machine tools is limited for the reason that hand labor is cheap and capital dear and because it requires a high-grade employee to operate machine tools. Fuel is scarce and there is a limited market for the output of factories, shops, and foundries.

The market is not organized. Direct orders from makers are usual and the terms of sale are arranged in each case. Sales are not made through advertising in publications, but usually from catalogues or, in the case of expensive tools, by a personal visit of the buyer to the factory. Jobbing houses sometimes order for individuals, but do not carry tools in stock. These houses are as follows: Deutz Hermanos; Valentin Elcoro y Cia.; Cia. Importadora de Maquinaria, S. A. The sale of this class of goods scarcely warrants a local house in carrying a stock.

The concerns using machine tools are as follows:

Fundicion de Fierro y Bronce.—Owner, Viuda de Domingo Bueno; employs 60 men; one lathe made by the Seneca Falls Manufacturing Co.; three lathes and one drill made by W. F. & J. Barnes; planer by H. C. Pease Manufacturing Co.; lathe of New Haven Manufacturing Co.; two lathes of Lodge & Shipley; boring and turning mill of H. Bickford; shaper of American Tool Works; die machine of Curtis & Curtis. Only one English machine is noted, a lathe. This shop and foundry uses 35-horse-

power electric current and manufactures sugar mills, nixtemal mills, pumps, posts, crushers, and has a repair shop.

Escuela Industrial Militar.—Boys' industrial school with carpenter and machine shops, using 50-horsepower petroleum engine; lathes of W. F. & J. Barnes, and Manning, Maxwell & Moore; also machine tools of J. A. Fay & Co.; Rowley & Hermange; Hendry Machine Co. (planer); punch of Buffalo Forge Co. There are two French metal-turning machines.

Fundicion Italo-Americano.—N. Pizzuto y Cia.; lathes of Draper Machine Co. and of Manning, Maxwell & Moore, and drill of Canedy, Otis & Co.

Cia. Fundidora y Manufacturera de San Luis.—J. W. Hall, manager; American foundry using American equipment.

VERA CRUZ.

[By Consul William W. Canada.]

In the State of Vera Cruz there are a number of large cotton mills, a jute mill, a petroleum refinery, several breweries, and a wire-nail works, each maintaining its own machine shops. The street railways of Vera Cruz and of Orizaba, as well as the different railroads, three in number, also have repair shops for the repair of their own cars exclusively. A fair-sized piece of work may be done at these shops or at the Government arsenal at this port.

While American-made tools are employed more than any other, tools from European countries are also used. There exists no prejudice against American-made tools; on the contrary, they are preferred by those who know them. In the majority of cases the tools used are ordered through a commission merchant in the country of origin.

Very little advertising is done, what little there is being usually inserted in the daily newspapers. There are large concerns that from time to time publish small pamphlets containing their price lists, but no trade journals or catalogues are published except the *Boletin de la Cámara Nacional de Comercio de Vera Cruz*.

While the concerns mentioned import directly for their own use, mainly from the United States, the following are the principal dealers in tools from all countries: Sommer Hermann & Co., M. Doring & Co. Sucs., and R. Varela e Hijo. These are old-established concerns having business connections in all parts of the Republic.

CENTRAL AMERICA.

BRITISH HONDURAS.

[By Consul W. L. Avery, Belize.]

Ten years ago there was not a machine shop in British Honduras, as the local blacksmiths were capable of doing all the repair work needed. With the establishment of the electric-light plant, the equipment of the British Honduras Railway, and the gradual putting in commission of more than 150 motor boats, shops and tools for upkeep and repairs became a necessity, and there are now three fairly well-equipped machine shops and one woodworking machine shop, all using American tools.

The machine shop in connection with the railway is, like the road itself, operated by the Government; it is furnished with tools of English make, as the Government is always encouraged to place orders for supplies with the Crown agents for the colony in London. The private shops, however, are buyers of American tools for reasons of preference and nearness to the American market.

Machine tools of the heavier types are not carried in stock by local merchants, lathes, drill presses, shapers, taps and dies, hack saws, etc., being ordered through commission houses in New York or New Orleans, or directly from a manufacturer. The freight from either port, if based on weight, is \$1 per 100 pounds; if on measurement, \$0.40 per cubic foot. Terms are usually 90 days, with a commission, when paid, of 5 per cent.

The capital invested in Belize in machine tools and shop equipment does not exceed \$6,000. The industry is not self-supporting, but is an adjunct to the business of three individuals—Joseph Lewis, J. Robert Boatman, and John E. Plummer. All shops do outside work, however.

The smaller tools, such as hammers, chisels, and wrenches, are carried in stock by the following hardware firms in Belize: Cuthbert Bros., James Brodie & Co., Hofius & Hildebrandt, and John Gentle & Co. These dealers have well-stocked hardware departments and sell to the sugar estates, mahogany works, ship carpenters and blacksmiths.

American machine tools hold the market in British Honduras with little competition when the purchaser has a free hand. The market for the near future will probably be limited to replacing broken, worn-out, and obsolete tools.

COSTA RICA.

[By Consul Samuel T. Lee, San Jose.]

Machine tools are used in Costa Rica almost exclusively for repair work. The mining and railroad companies, together with two private machine shops at San Jose and the Government repair shop at Punta Arenas, are the leading users of this class of machinery, nearly all of which is of American manufacture.

Machine tools are generally bought through New York commission houses, who charge a 5 per cent commission without funds and a 2½ per cent commission with funds. The usual export discounts of

American exporters are allowed, and only a very small number of standard machines are kept in stock by the larger hardware merchants of San Jose. The Purdy Engineering Co., of San Jose, also sells machine tools and covers the entire country.

There is no local advertising in this line and it is doubtful whether such expenditure would be justified. Catalogues from manufacturers of machine tools are on file in the American consular offices, and the market is reached by advertisements that appear in various American trade journals and technical magazines.

The following is a list of the firms now selling machine tools: Hardware stores, all in San Jose—M. Macaya & Co.; Gmo. Lahmann; Koberg & Echandi; Fortich, Espriella & Co.; José P. Rodriguez & Bro.; Carranza & Boletti; Purdy Engineering Co. The users of machine tools are as follows: Railway shops, San Jose—Northern Railway of Costa Rica; Ferrocarril al Pacifico. Private machine shops, San Jose—Alberto Rampazzina; Chavez & Lutz. Mining companies—Abangarez Gold Fields of Costa Rica, Abangarez, Costa Rica; Montezuma Mines, Montezuma, Costa Rica; Mina la Union, Miramar, Costa Rica. Government of Costa Rica—Señor Don Enrique Jiménez Nuñez, Ministro de Fomento, San Jose.

The usual export packing for shipment by steamship and railroad is all that is required. There are two ways of reaching this market—from United States ports to Limon direct, or via Panama and Punta Arenas on the Pacific. The direct rate from New York to Limon is approximately \$10 United States currency per ton, and the railway freight rate from Limon to San Jose is \$20 per ton. The rate from New York to Punta Arenas, via Panama, is \$12 per ton, and the railway rate from Punta Arenas to San Jose is \$10 per ton. The shipments to Limon should be marked with consignee's name and "Port Limon, Costa Rica." Shipments to Punta Arenas should be marked with consignee's name and "Punta Arenas, Costa Rica, via Panama."

HONDURAS.

CEIBA.

[By Consul Harold D. Clum.]

The only industrial establishment in the Ceiba consular district in which machine tools are used is the railway repair shop of Vaccaro Bros. & Co., located in this city. Only American tools are in use in this plant and with one exception they are giving entire satisfaction. The following machine tools are in use:

Two lathes, 8-inch swing and 19-inch swing, respectively, manufactured by the Rockford Drilling Machine Co.

Two drill presses, 14-inch and 28-inch, respectively, manufactured by the B. F. Barnes Co.

One shaper, 20-inch travel, manufactured by the R. A. Kelly Co.

One planer, bed 6 feet by 20 inches, manufactured by the New Haven Manufacturing Co.

One emery twist drill grinding machine (no name).

One combination bolt and pipe threading machine, manufactured by Wells Bros.

One hydraulic car-wheel pressing machine (for pressing wheels from axles), manufactured by E. R. Caldwell.

One belt-driven forging hammer, manufactured by Myer Bros.

The following may possibly be purchased in the near future: One locomotive driving-wheel lathe, one milling machine, one car-wheel boring mill.

All machine tools for use in the shop of Vaccaro Bros. & Co. are purchased through their principal office in New Orleans (Interstate

Bank Building), and the terms of sale are naturally those which prevail in the United States. There are in this district no representatives of manufacturers of machine tools, and there would be no reason for establishing an agency or representation; nor would it be profitable to advertise here. American industrial publications presumably reach the interested parties. It would be advantageous to send catalogues to the foreman of the establishment mentioned, as his recommendation would naturally be decisive in the choice of machines.

Vaccaro Bros. & Co. is the only concern in this consular district in a position to use machine tools at the present time. Shops may eventually be established in connection with the railway of the United Fruit Co. at Colorado, that of P. S. Elliot at Tela, the Honduras Rubber Co. at Nueva Armenia, and the proposed railway from Truxillo to Jutigalpa (John T. Glynn, of Truxillo, concessionaire), but there seems to be no likelihood that these concerns will establish shops in the immediate future.

Machinery for export to this part of Honduras should be packed as strongly and securely as possible. As those likely to import machinery have Government concessions for free entry, the fact that import duties are collected on gross weight need not be considered.

The freight rate from New Orleans via Vaccaro Bros. & Co. steamship line is \$0.40 United States currency per 100 pounds, less 20 per cent discount; that from New York via Southern Pacific Co. (Morgan line) and Vaccaro steamship line is \$0.60 per 100 pounds, plus 5 per cent primage and \$0.04 per 100 pounds tonnage duty.

PUERTO CORTES.

[By Consul Claude I. Dawson.]

This district affords only a small market for machinery of any kind. A 57-mile narrow-gauge railroad, one banana plantation, two river transportation concerns, and a hydroelectric power plant in course of development constitute the important industrial enterprises at this time. There is not a modern up-to-date machine shop in the district.

All of these industries are now, or were until very recently, American owned or controlled, and the machinery and tools installed for years past has been American made exclusively. Requirements of this description would naturally be supplied from the United States; and selections are easily made from illustrated catalogues that American manufacturers publish and distribute.

The restricted market does not warrant the mediation of direct representatives or the establishment of general agencies entailing the maintenance of demonstrators and stocks of goods. Direct purchase is the rule, reliance being placed in guarantee of satisfaction or return of goods. Customary advertising methods are not pursued. There are no trade papers. Under present conditions the most that can be hoped for from this section of Honduras is an occasional order to replace or supplement tools and machinery in existing shops.

The following concerns now use, or are prospective users of, machine tools:

Honduras National Railroad, Puerto Cortes.
Cuyamel Plantation, care of Hubbard-Zemurray Steamship Co., of Mobile, Ala.
Monte Vista Transportation Co., Puerto Cortes.
San Pedro Light and Power Co., San Pedro Sula.
Sula Ice Co., San Pedro Sula.
Morse Timber Co. (Ltd.), Omoa.

The logical shipping points from the United States are New York, Mobile, and New Orleans, from each of which steamers ply direct to Puerto Cortes, as follows:

From New York—Donald Steamship Co., United Fruit Co.; from Mobile—Hubbard-Zemurray Steamship Co., United Fruit Co.; from New Orleans—United Fruit Co., Atlantic Fruit & Steamship Co.

TEGUCIGALPA.

[By Consul A. T. Haeberle.]

There is no market for machine tools in the Tegucigalpa consular district. Such tools are used in the manual training school (Escuela de Artes), of Tegucigalpa, a Government institution of comparatively little importance. This school is equipped with a blacksmith shop, a carpenter shop, and with woodworking machinery that was purchased in Switzerland. Orders for the school are placed through the firm of J. Roessner & Co., of Amalpa, William Debber being the manager of this firm in the capital, Tegucigalpa.

There are no firms selling machine tools, but the following persons would keep catalogues on file for future reference: D. Fortin, L. K. Purdon, Julio Villar, of Tegucigalpa; F. Siercke, of Choluteca; and J. Roessner, of Amalpa or Tegucigalpa.

SALVADOR.

[By Consul General Thomas Hinckley, San Salvador.]

Salvador presents only a limited market for machine tools, owing to the fact that there are comparatively few manufactories in the country. The machine tools that are used are to be found at the coffee and sugar mills, in the railroad and electric-light companies' machine shops, and at several mines. In the majority of cases it is said to be more economical to keep on hand extra parts of machinery than to maintain even a few machine tools.

The United States supplies about 80 per cent of the market for this class of tools, consisting mostly of drill presses and small lathes; and the balance comes from England and Germany, from which it would seem that there exists no prejudice against the American article.

Sales are made direct and through traveling representatives, and also through correspondence. The territory covered by traveling representatives is generally either Mexico and Central America or all of Latin America. A commission of 10 per cent on sales is usually charged, and discounts range from 2 per cent to 50 per cent; the terms of sale being money on receipt of shipping documents, or half of the money in advance and the rest against the shipping documents.

Machine tools are advertised in the local newspapers in a general way, the rates for insertions being comparatively expensive. There are no other publications. Foreign agricultural and industrial periodicals, particularly those printed in the Spanish language, are read extensively.

The packing should be as light as possible because the import duties are levied according to the gross weight, and the marking should be the name and address of the consignee, the port of entry, the number of the package, and the mark of the consignor. So much confusion has been caused by the superfluous markings on goods from American firms that the authorities sometimes slightly penalize the importers.

The transportation rate from New York to the ports of Salvador is about \$16 a ton, and from the Port of Acajutla to the capital, San Salvador, the railroad rate is \$0.35 per 100 kilos (220 pounds).

LIST OF DEALERS AND USERS.

The following is a list of the individuals and the firms in San Salvador who are now selling or who would be willing to undertake the sale of American machine tools:

R. Sagera y Cía.
 Juan Lúders.
 Cayetano Clara D.
 Enrique Sagera.
 Melendez y McIntire.
 Hillebrandt-Harrison (Agencias Unidas).

S. Soler y Cía.
 Serarols y Olivette.
 Videgain y Cía.
 Baruch & Co.
 Cía. de Alumbrado Electrico.
 Charles Alchul.

The following is a list of the individuals and the firms who are at the present time using machine tools or who are in a position to use them:

Railways:

Salvador Railway Co. (Ltd.), San Salvador; purchasing agent, T. C. Tillbrook, Esq., 8 Idol Lane, E. C., London, England.

Guatemala Railway Co., San Salvador; purchasing agent, United Fruit Co., 17 Battery Place, New York City.

Ferrocarril de San Salvador á Santa Tecla; purchasing agent, H. de Sola, San Salvador.

Empresa de Tranvia Urbana San Salvador.

Machine shops:

Melendez y McIntire, San Salvador.
 Downey y Cía., Santa Ana.

Mining companies:

Butters Salvador Mines (Ltd.), La Union.

Butters Divisadero Co., La Union.
 Macay, Pullinger & Co., Tabasco.
 Monte Mayor Mining Co., Encuentros.
 El Gigante, Jocoro.

Electric light plants:

Cía. de Alumbrado Electrico, San Salvador.

Cía. de Alumbrado Electrico, Santa Ana.

Cía. de Alumbrado Electrico, San Miguel.

Cía. de Alumbrado Electrico, Sonsonate.

Owners of coffee and sugar mills:

Eugenio Aguilar, San Salvador.
 Arturo Bustamante, San Salvador.
 Fedor Deininger y Cía., San Salvador.
 Miguel Dueñas, San Salvador.

Ramon Garcia Gonzalez, San Salvador.

Rafael Lopez, San Salvador.

Carlos Melendez, San Salvador.

Francisco Melendez, San Salvador.

Angel Guirrola, Santa Tecla.

Salvador Sol, Santa Tecla.

Recaredo Gallardo, Santa Tecla.

Esteban Ulloa, Santa Tecla.

Pedro J. Escalon, Santa Ana.

James Hill, Santa Ana.

Concepción de Regalado, Santa Ana.

Jorge Arguello, San Miguel.

Samuel Quiros, San Miguel.

Carlos Wieser, San Miguel.

Antonio Alfaro, Ahuachapan.

Rafael Alvarez, Ahuachapan.

Onofre Duran, Ahuachapan.

A. Canessa, Santiago de Maria.

Meardi y Del'pech, Santiago de Maria.

Ezequiel F. Castañeda, Santiago de Maria.

Nicolas Angulo, San Vicente.

Juan Amaya, Cojutepeque.

Davidson Hermanos, Sonsonate.

Moisant Bros. & Co., Sonsonate.

Jesús Escobar, Santa Ana.

Antonio Martínez, Santa Ana.

NICARAGUA.

[By Consul James W. Johnson, Corinto.]

As Nicaragua is by no means an industrial country, the use of machine tools is limited. Of the machine tools now in use in this country about three-fifths are of American manufacture. The existing market is small, but as the railway was taken over recently by American interests, it is very probable that improvements will be made in the entire plant, especially in the repair shops at Managua. American manufacturers should communicate with Thomas O'Connor, Managua.

There are no general agencies or dealers; purchases are made directly from the manufacturers or through commission agents in the United States or Europe. There are no publications in which advertisements could profitably be inserted.

The following is a list of the machine tools in use in the Corinto consular district:

Machine tools.	Manufacturers.	Machine tools.	Manufacturers.
National Railroad shops:		National Railroad shops—	
Lathe, 12-inch.....	Hendey Machine Co.	Continued.	
Lathe, 18-inch.....	Edwin Harrington, Son & Co.	Planer, 24-inch.....	Bouhey, Paris.
Lathe, 14-inch.....	Manning, Maxwell & Moore.	Drill, horizontal press, 24-inch.....	Do.
Lathe, 24-inch.....	English make.	Slotter, 24-inch.....	Do.
Lathe, 20-inch.....	American make.	Drill, 24-inch.....	German make.
Lathe, 60-inch, for car wheels.	F. B. Mills Machine Tool Works.	Central American Com- mercial Co.:	
Bolt machine.....	William Sellers & Co. (Inc.).	Shaper, 18-inch.....	
Do.....	Prentice Bros. Co.	Lathe, 10-inch.....	
Shaper, 36-inch stroke.	Pratt & Whitney Co.	Thomas Bird:	
Jointing tool.....	J. A. Fay.	Drill press, small.....	American make.
Molding tool.....	Do.	Lathe, 18-inch.....	French make.
Mortice tool.....	Do.	Nicaragua Ice Co.:	
Planer, 24-inch.....	Do.	Lathe, 10-inch.....	W. F. & J. Barnes Co.
Table saw, circular.....	Do.	Julio C. Bähleke:	
Sizer, 24-inch.....	William Sellers & Co. (Inc.).	Drill press.....	American make.
Hydraulic press, 12- inch ram.	Do.	Shaper.....	Do.
Band saw.....	Bouhey, Paris.	Lathe.....	Do.
Drill press, 48-inch....	Do.	Constantino Castellon:	
Drill press, 12-inch....	Do.	Milling machine, No.	Do.
Power hammer, 500 pounds.	Do.	14.	Do.
		Lathe.....	Do.
		Cirilo Viloria:	
		Lathe, 14-inch.....	W. F. & J. Barnes Co.

WEST INDIES.

CUBA.

[By Consul General James L. Rodgers, Habana.]

Machine tools of all kinds are used to a limited extent in Cuban sugar mills, railroad shops, woodworking plants, marine engineering works, foundries, machine repair shops, and the various other plants. These machine tools are nearly all of American make and importation, the only competition being that of English manufacturers, who for reasons of sentiment, are able to sell to English railroad shops and sugar mills. It is generally acknowledged, however, that the American machine tool is more efficient, less cumbersome, and more positively automatic than the British, and therefore, aside from the reasons given, is preferred even if the price landed in a Cuban port will usually average 10 per cent greater.

It is not to be supposed that there can be much expansion of the market for American machine tools in Cuba. The annual demand is now small, the equipment is practically sufficient for present-day needs, and there is no likelihood of Cuba becoming a manufacturing nation.

SALES METHODS—PACKING—FREIGHT RATES.

Sales of machine tools in Cuba are usually through commission houses, of which there are many in Cuba, all appearing in the Cuban section of the World Trade Directory. However, orders are often given direct as a result of catalogues and correspondence, aided by technical magazines printed in the Spanish language.

The terms of sale are usually matters of special contract, but broadly stated they run from cash against a bill of lading at the home port to three to six months' credit, with note acceptance against the bill of lading. The commission charged by machinery houses is not governed by any fixed rule, but is never less than 5 per cent and usually double that and more.

All crating and packing of machine tools reaching Cuba is usually good, and shipments from England are notable in that respect. The American practice, however, is not faulty or, at all events, is not made the subject of complaint. This may be due to the short sea journey or to careful handling of bulky material.

The freight rates on machinery from the United States to Habana have run from 25 to 75 cents per 100 pounds, the charge being based upon bulk or weight. European rates, which are usually made under special contract, are known to be lower and to about offset the preferential reduction of duty on the American product. In addition to the freight rate there is added in Habana and most Cuban harbors a lighterage charge that runs from 4 to 15 cents per 100 pounds. There is also the tonnage tax levied for the improvement of harbors; on imports from the United States the rate is 70 cents per ton, and from other countries 88 cents.

DOMINICAN REPUBLIC.

[By Consul General Charles B. Curtis, Santo Domingo.]

As yet the use of machine tools in the Dominican Republic is limited to the few general machine and repair shops, to the carpenter

and other repair shops on the principal sugar estates, and to the railway repair shop at Sanchez.

Nearly all of the machine tools are of American manufacture, practically the only exceptions being those used by the railway at Sanchez, which is owned and operated by a firm in Scotland and is equipped with machinery and supplies from the United Kingdom. No statistics are published showing the imports of machine tools.

Practically all of the machine tools are purchased directly by the New York purchasing agents of the local sugar estates and other users of such tools. The only advertising of machine tools in this district is through the medium of a number of Spanish magazines and trade journals published in the United States that have a more or less extended circulation here.

There are no concerns selling machine tools, but should a comparatively large market be developed within a few years the following might be willing to undertake the sale of such articles: Sociedad La Industrial y Comercial, Santo Domingo; G. Marion Landais, Santo Domingo; S. Amable Iglesia, Santo Domingo; F. Ferrecio, Macoris; Rolando Martinez, Macoris.

Following is a list of individuals and firms who are at present using machine tools or who are in a position to use them: Departamento de Obras Publicas, Santo Domingo; Planta Electrica de Santo Domingo, Santo Domingo; Electric Light and Power Plant, Macoris; Ferrocarril de Santiago a Samaná, Sanchez; Ferrocarril Central Dominicana, Puerto Plata; Lara Coen, Santo Domingo; Manuel Rueda, Santo Domingo; Domingo Vasques, Santo Domingo; Damian de la Vega, Santo Domingo; Bernaldo de la Torre, Santo Domingo.

The table that follows contains a list of prominent sugar estates:

Managers.	Estates.	Address.
Felipe Vicini.....	Angelina.....	San Pedro de Macoris.
G. Stiernstam.....	Consuelo.....	Do.
F. Ferrand.....	Porvenir.....	Do.
S. E. Ros.....	Santa Fe.....	Do.
Juan de Castro.....	Quisqueya.....	Do.
D. Nuñez.....	Porto Rico.....	Do.
E. Despaignes.....	Cristobal Colon.....	Do.
Jose Benitez.....	San Luis.....	Santo Domingo.
A. T. Bass.....	San Isidro.....	Do.
Juan Morales.....	Italia.....	Do.
Jose Carvajal.....	Ocoa.....	Ocoa.
V. Montes de Oca.....	Azuano.....	Azuza.
John D. Dunbar.....	Ansonia.....	Do.

HAITI.

[By Consul John B. Terres, Port au Prince.]

The imports of machine tools into Haiti are increasing yearly and will continue to do so in proportion with the increase of enterprises requiring their employment.

The Central Railroad of Haiti imports extensively, and the National Railroad, which is now rapidly constructing its line, is increasing its imports of tools. The electric plant in this city and that at Cape Haitien imports to a moderate extent. The Haitian Government imports for the use of its machine shops. The foregoing concerns import through their agents in the United States. A few minor concerns buy through merchants located in this country. In nearly all cases the tools are from the United States, although a few may be imported from Germany.

The firms dealing in tools are as follows: Green, Knaebel & Co.; E. & F. Mevs; Louis Mevs & Co.; Henry Stark & Co.; and H. A. Stecker, all of this city. Firms located at other points are as follows: Roberts, Dutton & Co., of Aux Cayes; A. & E. Boutin, of St. Marc; La Compagnie Haitienne, of Port de Paix; Herrmann Reinblod & Co.; J. B. Vital, of Jacmel; F. Herrmann & Co., of Gonaives; P. G. Schutts, of Cape Haitien. The local firms order machinery and tools from the United States for the use of the various sugar and coffee concerns.

TRINIDAD.

[By Consul Franklin D. Hale.]

Machine tools are used to a considerable extent in Trinidad, possibly as much as in most agricultural countries where there is no general manufacturing. Such tools will be found principally in the automobile garages, the Port of Spain foundries, the Trinidad Government dry dock and workshop, the shops of the Trinidad Government Railway, the Trinidad Electric Co. (Ltd.), three furniture factories, one carriage factory, two lumber mills, on the large sugar-manufacturing estates, and in the shops of the asphalt and oil companies.

A large proportion of machine tools are imported from the United States, although some are brought from England and Germany. The market for such tools is good, although limited. With the prospective development in the oil industry it may reasonably be expected to increase considerably in the near future, as the more extensive machinery, etc., for the drilling of oil wells is largely imported from the United States.

In comparison with tools imported from other countries, those made in the United States give excellent satisfaction, being generally considered superior, although possibly costing less.

Some lines of tools are ordered through traveling salesmen, and some direct from the manufacturers, but the sales are usually made through New York commission houses. The tools are mostly imported by a few houses who wholesale to country districts or retail to meet the demands, as items in a general trade, without commission, discount, or special terms of sale. There is very little attention given to advertising to advance sales in such goods. Machine tools are now imported and carried in stock by Smith Bros. & Co., Arnott Lambie & Co., Wilson's (Ltd.), and Davidson & Todd. Some of the users of such tools import them direct.

Firms now using machine tools are: Trinidad Government dry dock and workshop; Alston & Co.; Trinidad Shipping & Trading Co.; Smith Bros. & Co.; Davidson & Todd; Stevens (Ltd.); Arnott Lambie & Co.; the New Colonial Co.; Tenants Sons Agency; New York & Bermudez Co.; Trinidad Lake Petroleum Co.; the New Trinidad Lake Asphalt Co.; John T. Gittens; and East End Foundry.

Repeated inquiry does not reveal any serious complaints about the failure of American exporters to properly pack and mark their goods coming to this country. As a rule the containing cases from England and other European countries are much heavier than the American, being made of thicker boards and more strongly banded, but the importer pays for the case, a charge which is not made by the American trade.

SOUTH AMERICA.

ARGENTINA.

[By Consul General R. M. Bartleman, Buenos Aires.]

Until the discovery of extensive fuel and iron mines in Argentina there will necessarily be a small market for machine tools. At present German, French, and British tools are preferred, as they are cheaper than the American product. There is no particular prejudice against American tools, but the objection is made that as they are designed for the maximum of work in the minimum of time they are not only expensive but are not sufficiently elastic to meet the demands of the jobber. Another objection is that they are too elaborate and complicated for relatively unskilled labor.

The methods of sale and the commission terms and discounts vary with every importer and the rating and character of the buyer, as well as the extent of the purchase. As a rule buyers will not purchase from catalogues. They prefer to see the goods, and many will even buy inferior machines of which they have seen a sample rather than accept the guaranty that the article to be imported is superior.

A large importer of machine tools offers the following criticism of the packing of these articles: American packing and marking is often deficient, the usual idea being to mount the machine complete or nearly so and put it into a flimsy box or even a crate held together by spragged hoops or twisted wire stapled down. This results in a general breakage of all fragile parts. If bracing is resorted to it is apt to be of a haphazard sort, wedged in without bolts or nails. The marking is usually too small. A 6-inch stencil for the mark and number, 3 inches for the port mark, and 1½ inches for the weights, would suffice. Machines should never be boxed mounted complete; they should be knocked down as far as practicable to reduce the cubic contents, on which ocean freight is paid, except in the rare case of a very heavy machine the gross weight of which exceeds 56 pounds per foot of the cubic content of the box measured on its outside dimensions.

Following is a list of the importers of machine tools in Buenos Aires:

J. & J. Drysdale & Co., Peru 440.
Tomas Drysdale & Co., Calle Moreno.
Agar Cross & Co., Defensa 140.
Fitte Hermanos, Moreno 834.
David Hogg & Co., Bolivar 236.
Robert Pusterla & Co., Belgrano esq. Peru.
Pedro Merlini, Defensa 245.
G. Schuchard & Co., Alsina 485.
Hasenclever & Co., Belgrano 673.
M. Recht & Lehmann, Defensa 271.

Blanch Hermanos, Bolivar 161.
Brander, Bergstrom & Co., Libertad 18.
Ulrich Duckwitz & Co., Paseo Colon 1102.
Elichagaray & Co., Paraguay 1399.
Estrabou & Co., Carlos Pellegrini 5.
Geiger, Zublin & Co., Chile 760.
F. Thomas, Esmeralda 121.
Negroni Hermanos, Defensa 346.
Tito Meucci & Co., Sarmiento 1431.

The principal users of machine tools in Buenos Aires and its vicinity are as follows:

Railways:

Ferrocarril Andino, Rio Cuarto, Argentina.
Ferrocarril Bella Vista a San Roque, Balcarce 196, Buenos Aires.
Ferrocarril Buenos Aires al Pacifico, Florida 783, Buenos Aires.
Ferrocarril Central Argentino, B. Mitre 299, Buenos Aires.
Ferrocarril Central Cordoba, Cordoba, Argentina.
Ferrocarril Central Cordoba y Rosario, Cangallo 499, Buenos Aires.
Ferrocarril Central de Buenos Aires (Ltd.), Corrientes 4002, Buenos Aires.
Ferrocarril Central de Chubut, San Martin 264, Buenos Aires.
Ferrocarril Central Norte, Tucuman, Argentina.

Railways—Continued.

Compañía Francesa de los Ferrocarriles de la Provincia de Santa Fé, B. Mitre 568, Buenos Aires.
 Compañía Belga Argentina de Ferrocarriles, B. Mirte 531, Buenos Aires.
 Compañía General de Ferrocarriles en la Provincia de Buenos Aires, B. Mitre 226, Buenos Aires.
 Ferrocarril Cordoba y Noroeste, Alta Cordoba, Argentina.
 Ferrocarril Cordoba y Rosario, Rosario, Argentina.
 Ferrocarril de Entre Rios, (Ltd.), Paraná, Argentina.
 Ferrocarril del Estado, Perú 672, Buenos Aires.
 Ferrocarril del Sud, P. Constitucion, Buenos Aires.
 Ferrocarril Internacional de Salta a Chile, Sarmiento 529, Buenos Aires.
 Ferrocarril Gran Oeste Argentino, Mendoza, Argentina.
 Ferrocarril Midland de Buenos Aires (Ltd.), 25 de Mayo 33, Buenos Aires.
 Ferrocarril Nordeste Argentino, Monte Caseros, Argentina.
 Ferrocarril Rosario & Puerto Belgrano, Defensa 335, Buenos Aires.
 Ferrocarril Oeste de Buenos Aires, Pueyrredón 128, Buenos Aires.
 Ferrocarril Rural y Puerto de Resistencia, Alsina 434, Buenos Aires.
 Ferrocarril Trasandino, Florida 755, Buenos Aires.

Tramways:

Tranvia Anglo Argentina (Ltd.), Av. de Mayo 819, Buenos Aires.
 Tranvia de Buenos Aires y Quilmes, Sarmiento 961, Buenos Aires.
 Tranvia a vapor de Rafaela, Cangallo 499, Buenos Aires.
 Tranvia del Oeste, Rivadavia 8810, Buenos Aires.
 Tranvia del Puerto, Pedro Mendoza 429, Buenos Aires.
 Tranvia Electricos de Buenos Aires, Talcahuano 417, Buenos Aires.
 Tranvia Electricos del Sud, Brasil 1329, Buenos Aires.
 Tranvia Lacroze, Corrientes 4002, Buenos Aires.
 Tranvia Puerto y Ciudad de Buenos Aires, Maipú 131, Buenos Aires.

Steamship lines:

Nicolas Mihanovich (Ltd.), Buenos Aires.
 Santiago Lambruschini, Rivadavia 335, Buenos Aires.

Repair shops and foundries:

E. Bolens, Montevideo 917, Buenos Aires.
 Brettell & Co., Charcas 5058, Buenos Aires.
 Buich & Solari, Paseo Colon 1047, Buenos Aires.
 H. P. Carstens, St. Rosalia 414, Buenos Aires.
 Coppola Hnos. Bustamente 590, Buenos Aires.
 D'Agosto Hnos, Alsina 2079, Buenos Aires.
 De Fontana Hnos, Isabel la Catolica 60, Buenos Aires.
 Fundicion Inglesa, Almirante Brown 691, Buenos Aires.
 Gourinski, Leon, Azopardo 1349, Buenos Aires.
 "La Cantabrica," Martin Garcia 665, Buenos Aires.
 "La Union," Corrientes 4056, Buenos Aires.
 Ernesto Mari, Saen Peña 1883, Buenos Aires.
 James Majoribanks, Ribera Sur del Riachuelo, Buenos Aires.
 Pedro Merlini, Larrea 530, Buenos Aires.
 Domingo Noceti & Co., Perú 535, Buenos Aires.
 Rae, Jensen & Co., Corrientes 4233, Buenos Aires.
 Rezzonico & Co., Presidente 851, Buenos Aires.
 Roque Salerno, Australia 1056, Buenos Aires.
 Sociedad Anonima Talleres Metalurgicos, Corrientes 1650, Buenos Aires.
 F. M. Stordeur, Alsina 2440, Buenos Aires.
 Pedro Vasena & Hijos, Cochabamba 3075, Buenos Aires.

Shipyards:

James Majoribanks, Ribera Sud del Riachuelo, Buenos Aires.
 "Dekade," Maipú 288, Buenos Aires.
 Ministerio de Guerra, Santa Fé 1461, Buenos Aires.
 Ministerio de Marina, Casa de Gobierno, Buenos Aires.

BRAZIL.**PARA.**

[By Consul George H. Pickerell.]

The Para consular district is not a manufacturing one in any sense of the word and the use of machine tools is consequently limited. Such tools are used principally for repair work, chiefly on river

steamers. These repairs consist for the most part in replacing damaged plates, turning new journals, and the simpler sort of machine work. A machine once installed is seldom replaced.

American machine tools are used here to a very limited extent. The Port of Para Co., an American concern, has installed a complete repair shop, but all of the machinery was ordered in England, where most of the capital was raised.

The one possible chance to introduce any quantity of machine tools in this district will be to get in touch with Booth & Co., of Liverpool, England, who, it is stated, have completed arrangements to take over the shipbuilding plant known as Richardson's, in Manaus, Brazil, which is to be rebuilt and refurnished with all that is latest in the machinery line. Aside from this purchases will be limited. Comparisons can not be made, but there is no prejudice against American machinery.

There are no particular methods of sale. Most of the local firms have agents or commissioners in Europe, to whom orders are communicated and by whom the purchases are eventually made, except of course such concerns as the Port of Para Co., whose headquarters are in London. Several of the local commission firms carry a full line of American machinery catalogues, but they are seldom shown unless there is a direct inquiry.

Aside from the regular foreign trade journals devoted to this branch of industry very little advertising is indulged in. Some of the best advertising is contained in the American trade journals, and every effort is made to get these into the hands of the owners of the shops, but as most of them are printed in English they do not create the interest they should. Such advertising should be followed up by good active representatives able to talk the language and demonstrate the value of the goods.

Following is a list of representatives of foreign houses: Englehard Freres & Cie., Rua Joao Alfredo, 66; Raul & Albert Englehard, Trav. Campos Salles, 16; Edward C. Holden, Rua San Antonio, 40A; George M. De Veer; Tettamanti & Irmaos, Rua San Antonio; R. O. Ahlers & Co., Praca Visconde de Rio Branco; Astlett, Fall & Co., Praca Visconde de Rio Branco.

Following is a list of shipyards and repair shops: The Port of Para Co.; Viuva Camelier; Manoel Pedro & Co.; Salvador, Mesquita & Co.; J. S. de Freitas & Co.; Amazon Steam Navigation Co. (Ltd.).

RIO DE JANEIRO.

[By Consul General Julius G. Lay.]

Machine tools in Brazil are used principally in connection with the repair work on railroads, electric tramways, car works, steamers, garages, power plants, etc. Manufacturing, such as would require metal-working machinery, is limited to simple agricultural implements, sheet-metal work, and coffee machinery.

England, Germany, and France are the only other countries than the United States that have established a machine-tool trade in Brazil. It is difficult to say exactly what proportion of the business falls to the respective countries, because there are no statistics on the subject, but it would be fair to assume from close observation that the countries furnishing machine tools rank as follows in importance: United States, England, Germany, and France. It is impossible to

give cost prices, as these depend so much upon the equipment furnished with the machine tools, but it is acknowledged that American machine tools are the highest in price. This is offset by their generally recognized superior qualities. American machine tools are now used on nearly every railroad and steamship line in the country. On the whole they are recognized here to be the best machines of their kind. There is no prejudice against American tools, except perhaps by some of the officials of English-owned railroads, who naturally would favor machinery with which they are best acquainted.

SALES METHODS—ADVERTISING.

Sales are usually effected through general agencies, sometimes assisted by direct technical representatives. The principal territory is that in the vicinity of Rio de Janeiro and Sao Paulo, by far the most important cities in Brazil. The general agencies cover these two districts directly and use subagents in the more outlying territory. American manufacturers should send a representative to visit their agents periodically.

The commission charges depend upon the arrangement made at the time of the drawing up of the contract with the manufacturer. If the agency assumes the financial risks, then they quote their own prices, based on their costs from the manufacturer. These prices will depend altogether on conditions and will not be anywhere near uniform. The profit in Brazil must be considerably greater than in the United States, because of the higher cost of doing business. If the agency merely acts as the company's representative and does not assume the financial risks, then a commission is agreed upon varying perhaps between 5 and 10 per cent, depending altogether upon the character of the manufacturer's line. This latter method is seldom employed, and business is usually transacted in its entirety by the local house.

There are only a few engineering periodicals in Brazil, so that advertising through that channel would not be thorough. The best plan is to distribute a well-illustrated catalogue to every interested party. The catalogue ought to be in Portuguese to produce the best results. French or Spanish would be much preferred to English. Too much importance can not be attached to the advantage of having the catalogues well illustrated. A Brazilian must be shown a photograph or a good cut of a machine before he will take any interest in it.

SELLERS AND USERS.

The following are first-class houses in Rio de Janeiro: Guinle & Co., Avenida Rio Branco 107; Norton Hegaw & Co. (Ltd.), Rua 1° de Marco 112; Buarque de Almeida & Cia., Rua de S. Pedro 87; Schill & Co., Rua S. Bento 30; Sampaio Corrêa & Cia., Candelaria 2; American Trading Co., Rua Rosario 98; F. H. Walter & Co., Rua Quintanda 141. These firms have either branches or connections in Sao Paulo, Bahia, and other important towns.

Following is a list of houses in Sao Paulo: M. Almeida & Co., Rua Quintanda 15; Herm Stoltz & Co., Rua Alvares Penteado 12; Schill & Co., Rua S. Bento, 8; Haupt & Co., Sao Paulo.

The principal users of machine tools in Rio de Janeiro are given in the following list: Central of Brazil Railway; Rio de Janeiro

Tramway, Light & Power Co. (purchasing agent, 115 Broadway, New York City); Brazil Railway; Leopoldina Railway Co.; Madeira-Mamore Railway; Oeste de Minas Railway; Paulista Railway; Sao Paulo Railway; Lloyd-Brazileiro; Lage Irmão.

There are also a great number of garages, foundries, and small plants all over the country using machine tools.

BRITISH GUIANA.

[By Consul Rea Hanna, Georgetown.]

The use of machine tools in British Guiana is very limited. In Georgetown there are two large machine shops—Sprostons (Ltd.) and the Demarara Foundry Co. There are possibly eight small machine shops with a foot-power lathe each. With the exception of a small match factory there are no manufacturing concerns here that use machine tools. There is a small machine shop in New Amsterdam connected with the Berbice Sawmill Co.

Sprostons (Ltd.) do launch building, docking and repair of vessels, and general machine and foundry work. Their machine shop contains the following tools:

15 lathes.
1 hydraulic press.
1 traveling crane.
2 overhead cranes.
1 air compressor and tools.
9 vices.
2 cold iron circular saws.
2 steam hammers.
1 steam shear and punch.

1 hand shear and punch.
2 rolling machines.
2 shaping machines.
2 planing machines.
2 threading machines.
1 vertical slotting machine.
10 drilling machines.
2 grinding machines.

The Demarara Foundry Co. has some 40 machine tools of a similar class. The Berbice Sawmill Co. has 4 lathes, 1 shaping machine, 1 drilling machine, 1 threading machine, 1 planer, and 3 bench lathes. Some of the sugar plantations have small repair shops for emergency work. The machine tools used total about 5 lathes and 5 drilling machines.

All of these tools, so far as can be learned, are of British manufacture with the exception of 1 lathe, 1 drilling machine, and 1 air compressor with British tools, at Sprostons (Ltd.), and the foot lathes in the small shops, which are all "Star" lathes. Almost without exception the machines are 15 or more years old and cost prices could not be obtained. There is no prejudice felt here against American-made machine tools.

No stocks are carried and any firm wishing to purchase machine tools orders direct or through one of the local commission houses. These commission houses charge 10 per cent on small orders to as low as 2½ per cent on large orders, payments being usually one-half of the cost with the order and the balance on delivery.

No exploiting or advertising of machine tools is done here on account of the very limited market, and the only publications in which advertising could be inserted are the two daily papers, the Daily Chronicle and the Daily Argosy.

The following is the list of local houses through which machine tools are ordered: Booker Bros., McConnell & Co. (Ltd.); Sandbach, Parker & Co.; Smith Bros. & Co. (Ltd.); J. P. Santos & Co. (Ltd.); J. E. Strickland & Co.; J. B. Sharples; Ferreira & Gomes.

CHILE.

[By Consul Alfred A. Winslow, Valparaiso.]

Machine tools are not extensively used in the Valparaiso consular district, for the reason that there are only a few industries of importance in the country. The tools in use have come largely from England and Germany, with England supplying about 45 per cent, Germany about 28 per cent, and the United States about 12 per cent.

There would be a good market here for more American machine tools if the importer were given as good credit facilities as are given him by the European manufacturer—that is, from 6 to 9 months, usually payable with 90-day drafts. American machine tools are recognized here as the best made.

Machine tools are imported into Chile almost exclusively through general machinery importers. A direct representative can accomplish much by way of showing up the advantages of the goods, but it is not an easy matter to sell for direct delivery to the consumer. The best results come through importing houses. It pays to advertise, and this can be best done through the house handling the goods, either by printed matter or newspaper advertising, or both. The manufacturer should be liberal with his representative in this matter, for it means much in creating a demand.

Goods for this market should be packed exceptionally well, with all castings well protected. When packed in cases castings should be packed so firmly that they can not shake about in the box. Cases should be marked in clear characters not less than 2 inches high. The name of the consignee, the name of the port of delivery, and the weight, in kilos, is all the marking the cases should have, and these should be placed on three faces of the box or crate.

IMPORTERS AND USERS.

Following is a list of general machinery importers: Morrison & Co., Valparaiso and Santiago; W. R. Grace & Co., Valparaiso and Santiago; Rose-Innes & Co., Valparaiso and Santiago; Saavedra Bernard & Co., Valparaiso and Santiago; Wessel Duval & Co., Valparaiso and Santiago; Balfour Lyon & Co., Valparaiso and Santiago; Ashcroft & MacNab, Valparaiso; John R. Beaver, Valparaiso.

The names of the users of machine tools are given in the following list: Cía. Refineria de Azucar de Viña del Mar, Valparaiso; Maestranza F. F. del Estado, Valparaiso and Santiago; Director General de los F. F. del Estado, Santiago; Soc de Maestranzas y Galvanizacion, Valparaiso; Balfour Lyon & Co., Valparaiso; Francisco Kúpfer, Santiago; Cía. Carbonifera Schwager, Valparaiso; Cía. Carbonifera Schwager, Lota; Cía. Lota y Coronel, Valparaiso; Cía. Lota y Coronel, Lota; Puissant e Hijo, Santiago; Cía. Refineria de Azucar, Tome.

COLOMBIA.**BARRANQUILLA.**

[By Consul Isaac A. Manning, Barranquilla.]

The use of machine tools in Colombia is confined to a few small shops or foundries and the railway shops and steamboat dry docks. In this district, of course, every little repair shop has its small lathe, but there are only two public machine shops, and they are both small. In these the machine tools are of American manufacture. Very few

purchases are made in England, Germany, or France, except in the case of railways owned by British capital.

American machine tools are preferred to European machines as a rule; in fact, many British and German master mechanics prefer American lathes, cutting machines, etc., to those made in Europe. These tools and machines are purchased from catalogues or through export commission houses, for cash. Few travelers for houses manufacturing this line visit Colombia, and the export houses charge the usual commissions.

Catalogues are ordinarily sent by manufacturers on request. Only a few manufacturers advertise in local papers, although this would probably be a better way of reaching the trade than through trade magazines printed in English. A number of American magazines reach the consulate and are sent also to local merchants. When published in Spanish they no doubt prove good mediums.

There are three firms who are selling or would be willing to undertake the sale of American machine tools—Empresa Hanseatica, O. Berne & Co., Francisco Carbonell W.

The users of machine tools in Barranquilla are as follows: German Ribon, machine shop and foundry; Victor Hugo Nicolassen, automobile repair and machine shop; Mortimer De Lima, machinist; Empresa Aliada de Vapores de la Magdalena (Pineda Lopez & Co., managers); Barranquilla Railway & Pier Co.; Ferrocarril de Puerto Wilches, care of A. H. Berg & Co., agents. Machine tools are also used by the Santa Marta Railway and the United Fruit Co., at Santa Marta, Colombia.

Freight rates from New York to Barranquilla are 14 cents per cubic foot, or 35 cents per 100 pounds, plus port charges, etc. Machines should be packed strongly, in as small packages as possible, and marked plainly.

CALI.

[By Consular Agent Edward H. Mason.]

The only machine tools used in the Cali district are in the shops of the Ferrocarril del Cauca and in the small shops of the Cali Tramway Co. and the Cauca Navigation Co. These few tools are almost all of American make.

All purchases of machine tools are made through commission houses in New York; but so far as can be ascertained no further purchases are contemplated at present. Purchasers here seem to consult American trade and technical journals, or let their commission agents get them prices in the United States.

At present everything must come in knocked down and packed for a 30-mile mule-back haul, but it is expected that in 18 months there will be railroad service to Cali.

MEDELLIN.

[By Consular Agent Silas H. Wright.]

The few machine tools to be found in the Medellin district are used by the coffee and sugar concerns and a few small foundries, cotton mills, railroads, and an electric-light plant. Such tools are imported from England, Germany, and France, but to a less extent than from the United States, which controls about 70 per cent of the hardware and machine-tool trade.

Though the trade is small, the market is good for machine tools and all kinds of hardware. Compared with those of other countries the American machine tools are superior in quality, and no prejudice exists against them.

Sales by European houses are made direct by representatives with complete and ample samplerooms for showing goods of every class. The American houses as a rule do business through general agencies and occasionally by direct representatives. Compared with credits given on general merchandise those given on machine tools are short, and discounts are much greater. Practically no local advertising is done, but foreign trade journals carrying advertisements are circulated here to some extent among the merchants.

The principal hardware firms of the city are the ones that usually handle machine tools. They are as follows: Almacén Americano; Almacén Británico; Almacén Universal; and Miguel Vasquez & Hijos. The following concerns use some machine tools: Ferrocarril de Antioquia (D. Carlos Cock, director); Ferrocarril de Amaga (D. Camilo Restrepo, director); Compañía de Tejidos de Medellín (D. Emilio Restrepo, director); Compañía Colombiana de Tejidos (D. A. Echavarría, director); Compañía Unida de Zancudo (D. Calos Martínez); Compañía de Tejidos de Cortez, Duque & Co. (D. Fernando Cortez, director); Compañía Antioquena de Instalación Eléctrica (D. Vicente Villa, director); Vellilla & Escobar (D. J. J. Escobar, director); Fundición Amaga (D. R. Restrepo, director).

PERU.

[By Deputy Consul Luther K. Zabriskie, Callao.]

As Peru is not a manufacturing country, the market for machine tools is small. The classes of industries in which machine tools are used are the following: Ship foundries and repair shops, railway (both electric and steam) repair shops, mining and smelting works, and, in a small measure, the large sugar estates.

It has been estimated that two-thirds of the machine tools used in Peru are brought in about equal quantities from the United States and Great Britain, the remainder coming from France, Belgium, and Germany. No special class is imported from any particular country.

There is no doubt whatever of the fact that with proper effort, considering the present rapidly increasing development of several industries, a growing demand for machine tools could be created, and by conforming carefully to local requirements in respect to prices, extended terms of credit, commissions, discounts, and especially to the packing and marking of goods, there is no reason why American-made machine tools should not take the lead over all others. The American product is everywhere regarded as being far superior to that brought in from other places, but on account of the higher prices demanded, the unfavorable terms of credit, and, above all, on account of the seemingly indifferent manner in which some manufacturers and shippers in the United States prepare their goods for export to this country, the buyers among the commercial houses are reluctantly obliged, they feel, to go elsewhere. Could these conditions be remedied the prejudice would appear to be strongly in favor of American-made machine tools.

SALES METHODS.

Sales of machine tools are, generally speaking, made through general agencies, although some are imported directly from the manufacturers by the larger concerns, such as the Cerro de Pasco Mining Co., the Peruvian Corporation (Ltd.), the principal steamship companies, and the larger of the ship foundries and repair shops. The limited market, however, hardly justifies the employment of direct representatives.

Most of the large importing houses in Peru have their headquarters in Lima and agencies throughout the entire Republic. In the sale of many articles, including machine tools, some of these concerns, as W. R. Grace & Co., cover a territory that includes Peru, Ecuador, Bolivia, and Chile. The commissions charged are usually 5 per cent, but are subject to variation, sometimes advancing to 8 and 10 per cent.

The favorite terms of sale are those for long periods, as granted, it is said, by Germany, France, and Belgium, which range all the way up to 90 and even 180 days. Discounts vary considerably. For "spot cash" from 5 to 8 per cent discount is usually allowed, though customers here rarely pay cash for any article, and different arrangements are made according to whether the manufacturers sell directly or through agents.

ADVERTISING.

Advertising is confined almost exclusively to a very limited number of daily newspapers in Lima, Callao, Arequipa, Cuzco, and Piura, of semiweekly and weekly papers for smaller places in the Provinces, and to one monthly periodical of Lima; to advertisements in the street and steam railways and the steamships; to mural inscriptions and bill posting; and to the distribution of literature. The leading papers in Peru for advertising purposes, and the only ones likely to be of any use whatever to American products, are the following: Lima—El Comercio, La Prensa, El Diario; Cuzco—El Comercio, El Sol; Piura—El Sol, Revista del Norte; Trujillo—La Industria, La Sancio; Callao—El Callao; Arequipa—La Bolsa, El Deber, El Pueblo; Puno—El Echo de Puno, La Union, El Inca, El Constitucional; Chiclayo—La Tarde, El Progreso, El Departamento, El Martillo.

Advertisements should be followed up by the agents with descriptive pamphlet literature, representing the specific branch of the goods in which the concern approached might be directly interested, rather than by sending bulky catalogues that include a large variety of matter, the greater part of which would be unattractive. It must be remembered in this connection, however, that certain classes of advertising matter, as well as samples, have to pay an import customs duty upon entering Peru, and provisions should be made in all cases so that the prospective customer will not be called upon to meet this expense.

IMPORTERS AND USERS.

W. R. Grace & Co., of Lima, Callao, and New York; G. Menchaca & Co., of Lima; and E. Humphreys & Co., of Lima, import American machine tools, and it is believed that any of the following Lima concerns might be induced to do likewise in case favorable conditions

were offered them: C. M. Morales & Co., H. Bidegaray y A. Costes, Gallo y Mujica Hermanos, Jaime Garreta, P. Herouard, Pedro Martinto, Emilio F. Wagner. Some of these firms have agencies at Callao, Paita, Salaverry, Trujillo, Huacho, Arequipa, Chiclayo, Mollendo, Pacasmayo, etc.

The following firms are using machine tools or are in a position to use them: Cerro de Pasco Mining Co., Lima; the Peruvian Corporation (Ltd.), Lima; the Vulcan Iron Works, Callao; the Eagle Iron Works, Callao; Empresas Electricas Asociadas de Lima, Lima; Empresa del Muelle y Darsena, Callao; Compañía Peruana de Vapores y Dique del Callao; Fundicion de Piedra Liza, Lima; Fundicion de Acho, Lima; Ferrocarril de Pacasmayo á Guadalupe, Pacasmayo; Ferrocarril de Trujillo á Salaverry, Trujillo; Ferrocarril de Chimbote á Recuay, Chimbote.

PACKING AND MARKING.

All wooden cases should be strongly bound with straps of hoop iron or wire, screws being used in all cases instead of nails, and, in view of the duty exacted on the gross weight of merchandise entering Peru, the shipper should seek a combination of the greatest strength and the greatest lightness possible in the packing of his goods. In addition, in order to disclose instances of tampering, all cases should be carefully sealed. All heavy articles should be packed in solid cases and should be so arranged as to prevent them from shifting about.

All directions on articles of merchandise coming into Peru should be carefully stenciled, in both the English and Spanish languages, and the gross, tare, and net weights should be marked in kilos. Above all, the marking and packing instructions given by the Peruvian buyer should be followed literally, not only in respect to the marks, numbers, and addresses appearing in the respective consular invoices and bills of lading and the specific directions received in this particular, but also in regard to the size, shape, and weight of the packages, since all goods carried into the interior of the country away from the railways are transported, for the most part, on the backs of mules and llamas, the mule being able to carry a 200-pound weight and the llama 100 pounds, the same being divided into two equal parts.

URUGUAY.

[By Consul Frederic W. Goding, Montevideo.]

Machine tools are used to a small extent in Uruguay in shipyards, repair shops, saw and planing mills, furniture factories, automobile repair shops, and in several Government workshops.

As the published records do not give the statistics relating to machine tools separately, the extent to which they have been imported and are used can not be given; but it is safe to say that while many came from England, France, Germany, and Belgium, a respectable number in use here were manufactured in the United States and give satisfaction. European-made machine tools are more numerous because they have been more thoroughly brought to the attention of those desiring them, and not from any prejudice against those of American manufacture.

The newspapers are utilized in advertising, as also are billboards, and lately an American electric sign has been placed at the west end of the Plaza Independencia, through which thousands pass every night. This sign was erected at a total cost of \$6,000, with an annual operating expense of \$7,000. It has a capacity of 40 advertisements, each being shown every seven minutes from dark to 11 o'clock at night. It is controlled by "Publicidad," a well-organized advertising concern here that places advertisements in all publications, street cars, and billboards in the Republic. This concern also supplies gratuitous information as to the mediums in which advertisements will produce the best results.

Sales are made by traveling salesmen visiting Uruguay at more or less regular periods, and through local houses. The terms are such as are mutually agreed upon in each case.

The packing should be in strong cases, the contents being protected from the dampness attending a sea voyage, the weights always being given in kilos. Great care should be exercised that the goods in each package be correctly indicated in the invoice, for otherwise fines are imposed by the customs officers here. At least copies of all invoices should be in Spanish.

VENEZUELA.

[By Consul Herbert R. Wright, Puerto Cabello.]

Machine tools are used to a considerable extent in the navy yard, meat factory, and railway machine shops in the Puerto Cabello consular district, but there is only one of these plants in which American machines are to be found. The other shops are English concerns and therefore use English-made tools. Foreigners residing here always prefer goods from their home countries. There is no prejudice against American machine tools, but the market seems to be very dull. Probably the best method of selling such goods is through direct representatives. It might be well to advertise in the following daily papers: *El Boletín de Noticias*, Puerto Cabello; *El Radical*, Valencia; *El Eco Industrial*, Barquisimeto.

There are no dealers who handle machine tools, but it might be possible to interest the following hardware dealers: *Otto Redler Suc. & Co.*, Puerto Cabello; *Mestern & Co.*, Puerto Cabello; *Mestern & Co.*, Valencia; *B. Tarbes & Co.*, Valencia; *Otto Redler Suc. & Co.*, Barquisimeto; *M. Gotz & Co.*, Barquisimeto. The firms who use machine tools at present are as follows: *The Puerto Cabello & Valencia Railroad Co. (Ltd.)*, Valencia; *the Venezuelan Meat & Products Syndicate (Ltd.)*, Puerto Cabello; *El Dique y Asterillero Nacional*, Puerto Cabello (*Dr. Luis Huñoz Tébar*, director); *the Bolívar Railroad Co. (Ltd.)*, Aroa, Estado Lara; *the South American Copper Syndicate (Ltd.)*, Aroa, Estado Lara.

The packing of any article exported to Venezuela should be as light as possible, as duty is charged on gross weight. The marking is governed by the wishes of purchasers in this country, and transportation rates are generally paid by the shippers.



